

WHAT IS CLAIMED IS:

1                   1.       A system for loading configuration data into a programmable device,  
2   the system comprising:  
3                   a configuration word register comprising a plurality of configuration blocks;  
4                   a plurality of configuration inputs selectively coupled with each of the  
5   plurality of configuration blocks and adapted to communicate configuration data; and  
6                   a plurality of command inputs adapted to independently enable loading of at  
7   least one of the plurality of configuration blocks, wherein the plurality of configuration  
8   blocks are adapted to simultaneously load configuration data via the plurality of configuration  
9   inputs in response to the plurality of command inputs.

1                   2.       The system of claim 1, wherein each of the plurality of configuration  
2   blocks is coupled with one of the plurality of command inputs.

1                   3.       The system of claim 1, wherein at least one configuration block  
2   comprises a plurality of bits equal in number to the number of configuration inputs.

1                   4.       The system of claim 3, wherein at least one configuration block  
2   comprises one or more bits, such that the total number of bits is less than the number of  
3   configuration inputs.

1                   5.       The system of claim 1, further comprising:  
2                   a configuration memory having a plurality of memory locations and coupled  
3   with the configuration word register, wherein the configuration memory is adapted to load  
4   configuration data from the configuration word register.

1                   6.       The system of claim 1, further comprising:  
2                   a configuration mode input; and  
3                   a configuration controller coupled with the configuration mode input, wherein,  
4   in response to a first state of the configuration mode input, the configuration controller is  
5   adapted to enable the plurality of configuration blocks to simultaneously load configuration  
6   data via the plurality of configuration inputs in response to the plurality of command inputs,  
7   and, in response to a second state of the configuration mode input, the configuration  
8   controller is adapted to enable loading of configuration data into the configuration word  
9   register via an alternate coupling with configuration data.

- 1                    7.     The system of claim 6, wherein the alternate coupling with  
2 configuration data is via the plurality of configuration inputs.
- 1                    8.     The system of claim 6, wherein the alternate coupling with  
2 configuration data is via the plurality of command inputs.
- 1                    9.     The system of claim 6, wherein the alternate coupling with  
2 configuration data is adapted to simultaneously load a one bit of configuration data into each  
3 of the configuration blocks.
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- 1                    10.    A method for loading configuration data for a configuration word  
2 comprised of a plurality of configuration blocks into a programmable device, the method  
3 comprising:  
4                    receiving a command word via a plurality of command inputs designating a  
5 first subset of the plurality of configuration blocks;  
6                    receiving a data word comprising a portion of the configuration data for  
7 configuration word via a plurality of configuration inputs; and  
8                    simultaneously loading the data word into each one of the subset of  
9 configuration blocks designated by the command word.
- 1                    11.    The method of claim 10, wherein the steps of receiving the command  
2 word, receiving the data word, and loading the data word are repeated for a second data word  
3 and a second command word designating a second subset of the plurality of configuration  
4 blocks.
- 1                    12.    The method of claim 11, wherein the second subset of the plurality of  
2 configuration blocks does not intersect the first subset of the plurality of configuration blocks.
- 1                    13.    The method of claim 10, wherein the command word comprises a  
2 plurality of command bits, such that each command bit is associated with one of the plurality  
3 of configuration blocks.
- 1                    14.    The method of claim 10, wherein at least one configuration block in  
2 the first subset of the plurality of configuration blocks comprises a plurality of bits equal in  
3 number to the number of configuration inputs.

1           15.    The method of claim 10, further comprising:  
2           loading configuration data from the plurality of configuration blocks into a  
3           memory location in a configuration memory.

1           16.    The method of claim 10, further comprising:  
2           receiving a configuration mode via a configuration mode input;  
3           enabling the first subset of the plurality of configuration blocks to  
4           simultaneously load configuration data via the plurality of configuration inputs in response to  
5           a first state of the configuration mode; and  
6           loading configuration data into the plurality of configuration blocks via an  
7           alternate communication means in response to a second state of the configuration mode.

1           17.    The method of claim 16, wherein the alternate communication means  
2           is via the plurality of configuration inputs.

1           18.    The method of claim 16, wherein the alternate communication means  
2           is via the plurality of command inputs.

1           19.    The method of claim 16, wherein loading configuration data into the  
2           plurality of configuration blocks comprises:  
3           simultaneously loading one bit of configuration data into each of the plurality  
4           of configuration blocks.

1           20.    The method of claim 10, further comprising:  
2           testing the programmable device loaded with the configuration data.

1           21    The method of claim 20, further comprising:  
2           repeating with a second set of configuration data the steps of receiving a  
3           command word, receiving a data word, loading the data word, and testing in order to test the  
4           programmable device loaded with the second set of configuration data.

1           22.    A system having a plurality of devices, the system comprising:  
2           a programmable device including:

3 a configuration word register comprising a plurality of configuration  
4 blocks,  
5 a plurality of configuration inputs selectively coupled with each of the  
6 plurality of configuration blocks and adapted to communicate configuration data, and  
7 a plurality of command inputs adapted to independently enable at least  
8 one of the plurality of configuration blocks, wherein the plurality of configuration blocks are  
9 adapted to simultaneously load configuration data via the plurality of configuration inputs in  
10 response to the plurality of command inputs; and  
11 an interface for connecting the programmable device with a configuration data  
12 source.

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1 23. The system of claim 21, further including:  
2 a configuration source having a set of configuration data and adapted to  
3 communicate the set of configuration data with the programmable device.

1 24. The system of claim 23, wherein the configuration source includes a  
2 plurality of different sets of configuration data and is adapted to test the programmable device  
3 by successively communicating each of the plurality of different sets of configuration data  
4 with the programmable device.